

P1547.2 Work Group Meeting Minutes February 2-3, 2006 Atlanta, GA

A meeting of the full IEEE Standard P1547.2 (*Draft Application Guide for IEEE Standard 1547, Standard for Interconnecting Distributed Resources with Electric Power Systems*) Work Group was held on February 2-3, 2006 in Atlanta, Georgia. The participant list is included as Attachment 1.

Specific writing assignments agreed to during the meeting are shown in the table below.

Sections	Assignments	Contributors
4: Defining the Interconnection System	Review material on Paralleling Switchgears	Jason Lin
6: Electric Power System	1) Create new outline	Scott Lacy
	2) Expand section 6.4 - Understanding local EPS	Terry Conrad
	3) Generate text for 6.2 - Operation of EPS Distribution System for Area, Local EPS and DR interconnection system and configure it for each of the new main sections (6.1, 6.2, 6.3)	Tom Gordon
	4) Obtain material/drawings on transformer connections	Murray Davis (Bob Saint to contact)
8: Application Guidance	1) Expand on 8.1.2 -Integration with Area EPS Grounding	Mac Brodie
	2) Expand section 8.1.4.2 - Secondary Grid & Spot Networks	Dan Salmon, Bill Ferro (need to ask)
	3) Review 8.1.8.1 - Protection from Electromagnetic Interference to ensure that it is consistent with C3790.2	Gerald Johnson
	4) Review 8.3.2 - Limitation of Flicker to see that it is consistent with the new IEEE flicker standard	Bob Saint
	5) Review/rework comment in 8.4.1 - Unintentional Islanding	Bill Ferro (need to ask)
	6) Review/rework section on passive/active protection in 8.4.1	Jason Lin
	7) Find and insert entire text of footnote 43 from 1547	RDC
Appendix E	Obtain example drawings	Mickey Pitt (Gerald Johnson to contact)
Appendix F	Generate text for System Impacts	Bob Saint (PES DR Group)

Additional writing assignment leads are included in the notes that follow. The changes and modifications pertain to draft 3.0, which was presented at the meeting. Draft 3.1 was developed based on meeting discussions, and will be posted with these meeting minutes. Both a “track changes” version and “changes accepted” version will be posted. The deadline for comments on draft 3.1 is April 7, 2006. Please provide comments using “track changes” on the “changes accepted” version of draft 3.1. Comments should be e-mailed to:

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Sheaffer@rdcnet.com

Draft 4.0 will be developed based on these comments and will be posted by May 1, 2006. The next meeting of the IEEE P1547.2 working group is scheduled during the week of June 5, 2006, hosted by NRECA, to discuss draft 4.0.

NOTE: Next P1547.2 meeting is set for June 6 (8:30 AM – 5PM) and June 7 (8:30 AM – 3PM) at NRECA Conference Center, Arlington VA. Notice and logistics will be established in March.

Mr. Robert Saint, Co-Chairman for the P1547.2 Work Group, chaired the meeting. Mr. Dick Friedman, Chair for P1547.2, was not in attendance.

Thursday, February 2, 2006 meeting of the P1547.2 Work Group covered:

P1547.2 Section	Proposed Changes	Writing Leads
Administrative issues	1) A PAR for Interconnected DG Impact studies was rejected. The DG Interconnection PES Group's next meeting will be in June in Montreal to produce an appendix to 1547.2 that addresses system impacts. Charlie Rogers stated that they should merge their efforts with the 1547.2 Working Group instead of doing it themselves. 2) There needs to be a standard footer that states that the document is copyrighted IEEE (T. Basso) 3) The draft of 1547.2 will need to be put in the appropriate IEEE format when complete	T. Basso
1.3 Limitations	1) Mac Brodie suggested removing bulleted phrase referring to 60 Hz. 2) If an appendix on impact studies is added, we may need to delete the bulleted phrase stating that this guide does not cover impact studies.	
2.0 References	Suggested additions included 1547.3 and the NEC code	

3.0 Definitions	No input	
4.0 The Defining the Interconnection System	Working group agreed that this section is pretty complete and in good shape. Jason Lin stated that he would review the section on paralleling switchgears one last time.	<u>Jason Lin</u>
5.0 The Distributed Resource 5.2 Power conversion technologies	<ol style="list-style-type: none"> 1) Working group agreed that this section is pretty complete, but that 5.2 (power conversion technologies) was a bit lengthy. Charlie Rogers asserted that the contrast between the power conversion technologies should be the focus of the text. Breakout group of Mac Brodie and Randy West decided to move everything but the introduction to an appendix. 2) Working group agreed that the references should be placed in the bibliography section 	<u>Mac Brody, Randy West</u>
6.0 The Electric Power System 6.1 Discussion of Area EPS Distribution circuits 6.2 Operation of Area EPS 6.3 Area EPS Concerns 6.4 Understanding the local EPS	<ol style="list-style-type: none"> 1) 6.1.1 Text is needed for Transformer Connections, need to check w/Murray Davis. 2) Breakout group formed to decide what to do with 6.2 3) Charlie Rogers recommended that 6.2 be used as background information if the breakout group decided to keep it. <p><u>Breakout group decided/suggested:</u></p> <ul style="list-style-type: none"> • Remove diagrams 6.3, 6.4, 6.5, 6.7 and 6.8 • Change header for 6.1. to “Understanding the Area EPS” • Remove the ‘meter’ symbol from all diagrams in sections 7 and 4 because 1547 does not address meters or metering and it was felt that having such a figure could lead to misinterpretation(s). • Reconfigure section 6 so that the order is as follows: Area EPS, Local EPS, DR Interconnection. This would result in the following main sections: <ol style="list-style-type: none"> 1) 6.0. Introduction 2) 6.1. Understanding the Area EPS 3) 6.2. Understanding the Local EPS 4) 6.3. DR Interconnection System 5) The headings under 6.2 would appear in each of the main 	<u>Scott Lacy (new outline); Terry Conrad (6.4); Tom Gordon (6.2); Mike Doyle</u>

	<p>sections so that each section would have equivalent paragraphs (6.2.1 would become 6.1.1, 6.2.1 would become 6.2.1 for local EPS, etc...). Tom Gordon said he could provide material for Area and Local EPS operation</p> <p>6) Scott Lacy suggested that the material for System Impacts currently in appendix D be used to supplement Area EPS Concerns</p>	
7.0 Example Interconnection Systems	1) Suggestion that the ‘meter’ symbol be removed from diagrams (see section 6)	<u>R. Friedman</u>
<p>8.0 Application Guidance for IEEE 1547</p> <p>8.1 General Requirements</p> <p>8.1.2</p> <p>8.1.4.2</p> <p>8.1.6</p> <p>8.1.7</p> <p>8.1.8</p> <p>8.1.8.1</p> <p>8.1.8.3</p>	<p>1) Breakout group formed to iron out competing submissions in multiple parts of section 8 (8.2 especially).</p> <p>2) Mac Brodie suggested that the Tips, Techniques & rules of thumb in 8.1.2 needed elaboration.</p> <p>3) Charlie Rogers stated that 8.1.4.2 needed expansion, perhaps an explanation of the 1547 requirement and suggested that the Working Group solicit Dan Salmon for input.</p> <p>4) Breakout group was supposed to finalize wording of 8.1.6 Mac Brodie wanted a better definition of the monitoring provision with respect to “aggregate 250 Kva.” However, this wording is from 1547 and Charlie Rogers and Simon Wall stated that the Working Group does not have the mandate to reword or reinterpret 1547.</p> <p>5) According to Bob Saint, we may need to work with Paul Doloff to add information on 1547.3 into section 8.1.6.</p> <p>6) Breakout group was to iron out competing submissions in 8.1.7.</p> <p>7) Working Group recommended deleting text just under the header of 8.1.8</p> <p>8) Gerald Johnson will check to see that 8.1.8.1 is consistent with C3790.2</p> <p>9) 8.1.8.3 Move placeholder from P. 94 under Impact of DR to 8.1.7</p> <p>10) 8.1.8.3 Remove placeholder on P. 95 under Tips,</p>	<p><u>Gerald Johnson,</u> <u>Charlie Rogers,</u> <u>Simon Wall, Jason</u> <u>Lin, Jim Lemke,</u> <u>Mike Bui, Paul</u> <u>Mattes, Bob Saint</u></p>

	Techniques & Rules of Thumb	
8.2 Response to Abnormal Conditions 8.2.1 8.2.2 8.2.3 8.2.4 8.2.5 8.2.6	1) Breakout group consolidated multiple submissions (C. Rogers, S. Wall, G. Johnson, M. Brodie) 2) Breakout group provided comments on Simon Wall's submission in 8.2.3 3) Breakout group decided to delete note under heading of 8.2.4 4) Breakout group addressed comments in 8.2.4 on P. 124 5) Breakout group decided to remove comment in 8.2.5 at bottom of P. 126 6) Breakout group decided to remove Tips, Techniques & Rules of Thumb in 8.2.6	<u>Charlie Rogers,</u> <u>Simon Wall,</u> <u>Gerald Johnson, Mac Brodie</u>
8.3 Power Quality 8.3.1 8.3.2	1) Remove comment under Impact of DR in 8.3.1 2) Working Group noted that the IEEE flicker standard has changed. Bob Saint is supposed to check it to see if there is any impact on 8.3.2	<u>Bob Saint</u>
8.4 Islanding 8.4.1 8.4.2	1) Working Group suggested checking with Bill Feero about comment on P.142 in 8.4.1 to see if he wants to amplify or clean it up 2) Passive vs. Active protection needs to be consolidated/reworded. Jason Lin should provide input. 3) Footnote 43 is incomplete, need the entire text from 1547	<u>Bill Feero, Jason Lin</u>
9.0 Testing	1) Working group felt this section was good and simply needed editing	<u>R Saint, R. Friedman</u>

Friday, February 3, 2006 breakout meeting of the P1547.2 Working Group covered:

10.0 Interconnection Information 10.1 DR Design & Construction 10.2 Operation & Maintenance	1) Working Group decided to change title to 'Interconnection Process Information' 2) Working Group decided to make this section 2 paragraphs long (See draft 3.1) and to move the rest to an appendix 3) Working Group had doubts as to whether the checklist (10.8) was appropriate for the guide	<u>R. Friedman</u>
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App A - Bibliography	Search through the document for papers & books cited in the text and place them here	<u>Friedman & Basso</u>
App B – Glossary	1) To be done at the end of the process 2) Need definition for grounding from IEEE standard 142	
App C – Prime Movers	Ok	
App D – Power Conversion Equipment	To be pulled in from section 5.2	<u>Mac Brodie, Randy West</u>
App E – Example Drawings		<u>M. Pitt</u>
App F – System Impacts	Could be moved to section 6 (Area EPS Concerns)	<u>Scott Lacy</u>
App G – Impact Studies	Need input/outline from PES DR Group	<u>Bob Saint</u>
Certification	No text currently in the draft. Working group decided to delete this appendix.	<u>Dick DeBlasio</u>
App H - Grounding	Mac Brodie suggested that there needs to be more information on grounding (8.1.2) and volunteered to draft additional material based on the NRECA appendix.	<u>Mac Brodie</u>
App I – Index		

Respectfully submitted, Bob Saint, Co-Chair

ATTACHMENT 1

P1547.2 Work Group Meeting

Atlanta, GA

Attendees

Brodie	Mac	Vancouver Computer Drafting Service
Bui	Mike	TXU Electric Delivery
Conrad	Terry	Concurrent Technologies Corporation
Doyle	Mike	TXU Electric Delivery
Gordon	Tom	Siemens Power Generation, Inc.
Johnson	Gerald	Basler Electric
Johnson	Travis	Georgia Power Company
Lacy	Scott	Southern California Edison
Lemke	James	Cinergy-PSI
Lin	Jason	GE Zenith Controls
Mattes	Paul	NiSource Energy Technologies
Rogers	Charles	Consumers Energy
Saint	Bob	National Rural Electric Cooperative Association
Wall	Simon	Capstone Turbine Corporation
West	Randy	Concurrent Technologies Corporation